

PROFITABLE. AND OUT OF MONEY.

Twelve lessons in which a class runs a real business — a hydroponic bench they cost, price and sell from. In week five they are R45 short with R281 of profit on the way, and they learn **the thing that actually closes small businesses**.

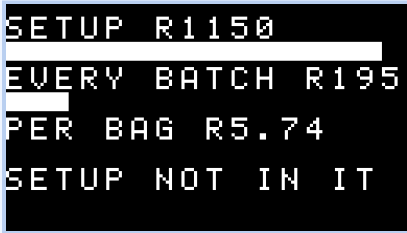
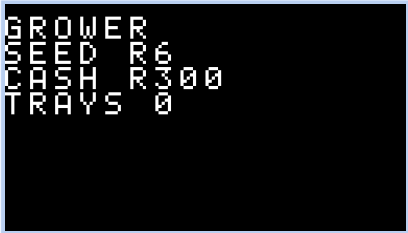
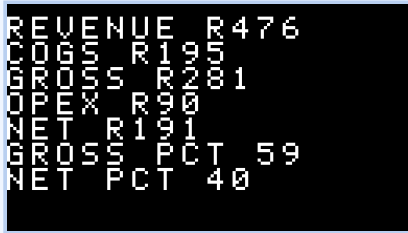
NEW PILOT COURSE · GRADES 5-9 · NOW BOOKING

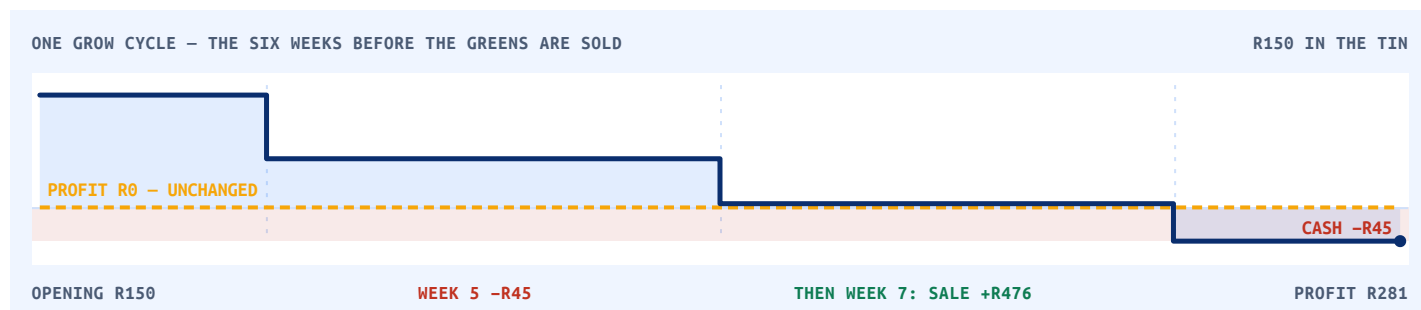
WHO	WHAT	HOW LONG	KIT	NO BOARD?	CURRICULUM
Ages 10-15 Grades 5-9	12 lessons 3 parts	One term 45-60 min each	1 board per student	Runs in the browser	EMS & Maths CAPS-aligned

HOW IT BUILDS

From one grow bench to a room full of traders.

Every lesson carries exactly one business idea and one coding idea. Nothing is simulated on a worksheet — every cost, every price and every shortfall happens on hardware the students are holding.

PART 1	LESSONS 1-4	PART 2	LESSONS 5-8	PART 3	LESSONS 9-12
Your Own Grow  Lesson 2 · the two piles, on the board A till you can press. Then the split that decides everything: R1 150 of bench you keep, R195 of seed and nutrient you spend again. Only the second pile belongs in the price of these greens. ONE BENCH · NO NETWORK		The Supply Chain  Lesson 5 · a grower receiving a supplier's quote Benches buy from each other by radio. One becomes the supplier and quotes a price; the rest order stock, take thirty days to pay, and watch a pump die during load shedding. BOARD-TO-BOARD RADIO · STILL OFFLINE		Market Day  Lesson 10 · an income statement, on a 128x64 screen The benches join WiFi and subscribe to a demand feed the teacher controls. Gross margin against net, payback on a second bench — then twenty-five stalls trade the same market day. WIFI · LIVE FEED · DASHBOARD	



They set out to grow more. The one that grew less is still trading.

The capstone is not scored on how much you sell. It is scored on net profit — with one rule above it: run out of cash and there is no score at all. These are the real figures from one eight-cycle season, three of them rainy.



Steady against expanded, same season, same weather

ONE SEASON • R1 500 OPENING CASH

	STAYED AT ONE	BOUGHT A SECOND
Cycles survived	8	6
Bags sold	198	147
Lowest cash	R1 500	-R225.55
Finished on	R2 061.30	-R225.55
Score	+R561.30	No score

The stall that expanded doubled its seed bill immediately, then three rainy market days arrived and there was nobody to sell the extra bags to. It closed in cycle six having sold **fewer** bags than the stall that never expanded — and its profit looked healthy right up until the money ran out.

INSIDE EVERY LESSON

Read it, build it, break it, defend it.

LEARNING GOAL	One business idea, one coding idea. Never two of either.
THE PROGRAM	A working project that opens in Canvas — blocks and the Python they generate.
YOUR TURN	A change to make, with a picture of the result they are aiming at.
CHECK YOURSELF	A question with a real answer, explained — not a definition to recall.

THE CONCEPT	Written for the student, in plain language, with the awkward parts left in.
FLOWCHART	One trip round the loop, where the logic is the point.
KEY TERMS	A flip deck: capital, operating, unit cost, break-even, working capital.
THINK ABOUT IT	A written reflection. Several have no comfortable answer.

Every program in this course was run before it was printed.

The code is the blocks

The Python shown to students is generated from the blocks themselves, by the same code the editor runs. It cannot drift out of step with what they see.

Every demo executes

All 24 programs — twelve lessons, both boards — run in the simulator during the build, including a stand-in bench sending real radio and market messages.

So is the arithmetic

The unit cost, the cash curve and the income statement are checked against an independent model — and so is every figure quoted in the lesson text. A page that contradicts its own demo never ships.

THE CAPSTONE

Market Day.

Students have 34 bags that cost R195 to grow and a stall that costs R90 whatever happens. They write their pricing rule on paper before they write a single block. Then the market opens, and the teacher decides the weather.

00:00	The feed opens. Every stall subscribes, and the first price and buyer count land on all twenty-five boards at the same instant.
+04:00	Rain. The teacher presses one key and the buyers halve. Greens do not keep, so every stall has to decide: cut the price to clear the stock, or hold it and bin what is left.
+08:00	Load shedding. The pump heartbeat stops. Water levels still read perfectly normal, and the benches that built the watchdog in lesson 8 are the only ones that notice.
+12:00	School fair. A crowd arrives and they will pay more — but you can only sell what you grew, and the stall that undercut on the rainy day has nothing left.
+15:00	The market closes. Any stall that went below zero shows NO SCORE . Scores are read out on net profit, and the stall that sold the most is usually not the winner.

BRING IT TO YOUR SCHOOL

Book a pilot term.

We run the first Market Day with your teacher, supply the boards, and leave the course in your LMS. Parts 1 and 2 need no internet at all — a room, the boards, and one teacher willing to make it rain.

WEB

www.sheen.bot

COURSE

Cash Crop

AGES

10–15 · Grades 5–9

BOARDS

sheenbot[∞] & pi